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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,176	01/29/2001	James A. Proctor JR.	2479.2071-000	1093
21005	7590	07/11/2005	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/772,176	Applicant(s) PROCTOR, JAMES A.	
	Examiner Edith M. Chang	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 14, 2005 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-42 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claims 18-19 and 38-39 are objected to because of the following informalities:

Claims 18 & 38, line 1: "the parameter" is suggested changing to "the least one parameter", "data transfer rate, power level, FEC coding rate, modulation attribute, or antenna characteristic" should be changed to "a data transfer rate, a power level, a FEC coding rate, the modulation attribute, or an antenna characteristic".

Claim 19, line 1: "the parameter" is suggested changing to "the least one parameter".

Claims 19 & 39, lines 2-3: "FEC coding rate, or modulation attribute" should be changed to "the FEC coding rate, or the modulation attribute".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 15-17 and 35-37 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: an antenna with an antenna mode that the antenna mode is capable to be changed.

6. Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42, lines 5 & 7: "the first and the second stations" lacks antecedent basis; line 6: "the wireless link" lacks antecedent basis; line 9: "the rapid changes" and "the signaling path" lack antecedent bases.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 3-14, 18-21, and 23-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Moriyama (US 6,307,879 B1).

Regarding **claims 1, 21 & 41**, in FIG.12, Moriyama teaches digital radio communication apparatus (column 1 lines 6-11) provided with filters to adapt for variations of the transmission path (column 4 lines 40-42). In FIG.12, the station communicates with other stations via antenna 1, the station comprises program means CPU 41 and DSP 47 (column 15 lines 40-44 & lines 49-60).

The CPU 41 (as the *processing unit*) determines the bit error rate ER based on the received data RD (column 15 lines 52-55) and detects the eye distortion based on the provided received data RD from the outputs of FIRs 22 & 23 (column 15 lines 62-66, the eye distortion based on the outputs of FIRs 22, 23). In FIG.13 A&B, the eye distortion (column 16 lines 1-4) results from a variation of amplitude as well as a variation of phase (column 16 lines 13-16), hence the CPU 41 *calculates* the eye distortion (as the *metric*) which is a standard of measurement and a mathematic function of a changing wireless channel (column 16 lines 44-54, wherein the eye distortion indicates the variations of the received signal); and

the facilities (DSP 47 with FIRs 22 & 23, as the *compensator*) *adjust* the eye distortion (as the parameter, column 15 lines 64-66).

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Regarding **claims 3-4 & 23-24**, Moriyama teaches the eye distortion is directly related to degradation in the reception (column 15 lines 62-65), and the reception level is related to the distance between the two stations (column 9 lines 52-53 & 56-58, wherein the reception is relatively high when the distance is small, the reception is relatively low when the distance is large), hence the eye distortion (the metric) is indicative of motion of the stations.

Regarding **claims 5-7 & 25-27**, in FIG. 12, Moriyama teaches the eye distortion (the metric) being computed from a signal received from the AGC 25 and the metric is a function of statistic, the variance (column 16 lines 55-57, lines 65-67).

Regarding **claims 8-10 & 28-30**, in FIG.12 & FIG.13 A&B, Moriyama teaches the eye distortion being generated from a phase error signal (column 16 lines 13-16, wherein the variation of phase is the phase error) produced by the matched filter and correlator used in the CDMA (column 18 lines 55-60).

Regarding **claims 11-13 & 31-33**, in FIG.12, Moriyama teaches the eye distortion computed from the outputs of FIRs 22 & 23, which receive a frequency error signal from the AFC 20.

Regarding **claims 14 & 34**, in FIG.13A & B, Moriyama teaches the eye distortion (the metric) being compared to a threshold 3 (column 14 lines 49-57).

Regarding **claims 18-20 & 38-40**, in FIG.12, Moriyama teaches reception 5 with AGC 25 and AFC 20, receiving a modulated signal received from the antenna 1 via the wireless channel, hence Moriyama teaches minimizing the frequency, phase or the amplitude offset of the received modulated signal.

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Regarding **claim 42**, Moriyama teaches the station with transmission 3 and reception 5 with processors (47 & 41) and storages (28 & 42) to calculating the eye distortion (metric) and adjusting one parameter (refer to the rationale of the rejection of the claim 1), and it is well-known in the art that the hardware (DSP etc.) and software (instructions stored in the computer-readable medium) of the wireless terminals to perform the wireless functions (TDMA & CDMA), the functions implemented in software or in hardware is equivalent. The limitation of the computer-readable medium having stored thereon sequences of instructions including instructions when executed to perform is obvious and does not particular indicate the invention subject matter.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama (US 6,307,879 B1).

Regarding **claims 2 & 22**, Moriyama does not explicitly show the base station and mobile station in the FIG.12 of the third embodiment, however in FIG.15 of the fifth embodiment Moriyama teaches the *base station* 70 and the *mobile stations* 60 wherein the processing unit 41 is included in the mobile station. At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have the mobile

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station calculating and adjusting the eye distortion taught in the FIG.12 & FIG.13 employed in the CPU 41 and DSP 47 of mobile 60 in FIG.15 to have a system be able to adjust the eye distortion and reduce the jamming as well (column 18 line 21-24).

11. Claim 15-17 and 35-37 rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama (US 6,307,879 B1) in view of Thomas (US 6,697,642 B1).

Regarding **claims 15-17 & 35-37**, Moriyama does not specify the antenna mode, however in FIG.4, Thomas teaches the mobile (column 5 lines 34-36) having the directional antenna (58, column 2 lines 25-31, wherein the antenna has the omni or the directive pattern/mode) with beam elements (58₁ to 58_N), and the antenna controller 516 (column 8 lines 14-21) to control the antenna having a relatively narrow beam steered to a desired direction (column 8 lines 26-29). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to have the directive antenna and the antenna controller taught by Thomas in the Moriyama's station that the antenna controller receives the coded/decoded signal (determined the signal quality, column 3 lines 15-21 '642) to reduce the co-channel interference to improve the capacity (column 7 lines 15-21 '642).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yano et al. (US 5,559,790) teaches the variance of probability density distribution

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related to the amplitude of the received signal in the signal-to-noise ration measuring and adjusting in the wireless terminals (FIG.12, column 2 line 61-column 3 line 13);

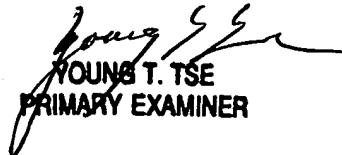
Brown et al. (US 5,767,738) teaches the variance of the frequency offset to a threshold (FIG.3 the demodulator controller of the Walsh Symbol Processor FIG.2 of the receiver 124 FIG.1, column 4 lines 37-42).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
June 29, 2005


YOUNG T. TSE
PRIMARY EXAMINER